

**REMARKS**

The present Amendment is in response to the Office Action mailed June 24, 2004 in the above-identified application. Enclosed herewith is a Petition requesting a three-month extension of time for resetting the deadline for responding to the Office Action from September 24, 2004 to and including December 24, 2004.

In the present Amendment, Applicants have amended claims 1, 5, 8, 10-12 and 15-18.

The Examiner rejected claim 5 under 35 U.S.C. § 112, second paragraph, as being indefinite. In response to the Section 112, second paragraph, rejection, claim 5 has been amended to add the language "selected from the group consisting of." Thus, claim 5 is deemed to satisfy the requirements of 35 U.S.C. § 112, second paragraph, and is otherwise allowable.

The Examiner rejected claims 1-9, 12 and 14 under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent Application Publication No. 2004/0010316 to William et al. Independent claim 1 is unanticipated by William because the reference neither discloses nor suggests an apparatus including "a first member . . . having a first toroidal saddle shaped articulation surface including a first concave arc extending between leading and trailing ends of the first articulation surface and a first convex arc extending between first and second lateral ends of the first articulation surface." Claim 1 is also unanticipated because William neither discloses nor suggests an apparatus including "a second member . . . having a second toroidal saddle shaped articulation surface including a second convex arc extending between leading and trailing ends of the second articulation surface and a second concave arc extending between first and second lateral ends of the second articulation surface." Claim 1 is also unanticipated because William does not disclose an apparatus including first and second members "wherein the first concave arc has a radius that is greater than the radius of the second convex arc and the second concave arc has a radius that is greater than the radius of the first convex arc." Claims 2-7 are unanticipated, *inter alia*, by virtue of

their dependence from claim 1, which is unanticipated for the reasons set forth above.

Independent claim 8 is unanticipated by William because the cited reference neither discloses nor suggests first and second members having opposing saddle shaped articulation surfaces whereby "the first and second saddle-shaped articulation surfaces are sized and shaped to engage one another when the first and second members are disposed in the intervertebral disk space to enable the first and second vertebral bones to at least axially rotate relative to one another through a range of angles, wherein the single concave arc of the first articulation surface has a radius that is greater than the single convex arc of the second articulation surface and the single concave arc of the second articulation surface has a radius that is greater than the radius of the single convex arc of the first articulation surface." Claim 9 is unanticipated, *inter alia*, by virtue of its dependence from claim 8, which is unanticipated for the reasons set forth above.

Claim 12 is unanticipated by William because the cited reference neither discloses nor suggests an apparatus having first and second members with opposing articulation surfaces "wherein the concave arc of the first articulation surface has a radius that is greater than the convex arc of the second articulation surface and the concave arc of the second articulation surface has a radius that is greater than the convex arc of the first articulation surface." Claim 14 is unanticipated, *inter alia*, by virtue of its dependence from claim 12, which is unanticipated for the reasons set forth above.

The Examiner rejected claims 1-12 and 14-17 under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent Application Publication No. 2004/0024462 to Ferree et al. Independent claim 1 is unanticipated by Ferree because the cited reference neither discloses nor suggests an apparatus including a first member and a second member having opposing toroidal saddle shaped articulation surfaces "wherein the first concave arc has a radius that is greater than the radius of the second convex arc

and the second concave arc has a radius that is greater than the radius of the first convex arc." Claims 2-7 are unanticipated, *inter alia*, by virtue of their dependence from claim 1, which is unanticipated for the reasons set forth above.

Independent claim 8 is unanticipated by Ferree because the cited reference neither discloses nor suggests an apparatus including first and second members having opposing saddle shaped articulation surfaces "wherein the single concave arc of the first articulation surface has a radius that is greater than the single convex arc of the second articulation surface and the single concave arc of the second articulation surface has a radius that is greater than the radius of the single convex arc of the first articulation surface." Claims 9-11 is unanticipated, *inter alia*, by virtue of their dependence from claim 8, which is unanticipated for the reasons set forth above.

Independent claim 12 is unanticipated by Ferree because the cited reference neither discloses nor suggests an apparatus including first and second members having opposing saddle shaped articulation surfaces "wherein the concave arc of the first articulation surface has a radius that is greater than the convex arc of the second articulation surface and the concave arc of the second articulation surface has a radius that is greater than the convex arc of the first articulation surface." Claims 13-17 are unanticipated, *inter alia*, by virtue of their dependence from claim 12, which is unanticipated for the reasons set forth above.

The Examiner rejected claims 1-4 and 6-17 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 6,039,763 to Shelokov. Referring to FIGS. 1A-1C and 2A-2C thereof, Shelokov discloses an artificial disk including a first plate 1 and a second plate 10. Referring to FIGS. 1A-1C, the first plate 1 has a substantially flat superior surface 2 and an opposing articulating inferior surface 3 having two laterally juxtaposed convex portions 4, 5. Referring to FIGS. 2A-2C, the second plate 10 includes a substantially flat inferior surface 11 and an articulating superior surface 12 having two laterally juxtaposed concave portions 13, 14. Referring to FIGS. 3A-3B,

as the upper and lower plates 21, 22 articulate along their articulating surfaces 25, 26 the upper plate 21 will move in the direction indicated by the arrow B from the home position depicted in FIG. 3A to a second position depicted in FIG. 3B. In the home position, the plates 21, 22, share a common center of rotation (23a,b). However, when the upper plate 21 is articulated to a second position as depicted in FIG. 3B, the instant centers of rotation 23a, 23b are no longer coincident. Therefore, when a patient using the Shelokov device bends in a forward or backward manner, the instant centers of rotation 23a, 23b will be displaced away from each other in an anteroposterior fashion, i.e., there will be an anteroposterior translation of the instant centers of rotation 23b with respect to the instant center of rotation 23a.

FIGS. 4A and 4B of Shelokov depict partial cross-sectional rear, or posterior, elevation views of an artificial spinal disc 30 having a first superior plate 31 and a second inferior plate 32. The first superior plate 31 has a bicondylar articulating surface that articulates with a bimodal concave articulating surface 34 of the second plate 32. The plates 31, 32 are depicted in a home or neutral position. However, when the first plate 31 is translated laterally along the arrow T with respect to the second plate 32, the first plate 31 will tilt slightly with respect to the second plate 32 and the instant centers of rotation 35a, 35b will be displaced from one another. Thus, the Shelokov artificial spinal disc provides first and second articulating surfaces that are adapted to provide a changing center of rotation when the articulating surfaces are translated or articulated with respect to one another in a lateral-to-lateral fashion.

Claim 1 is unanticipated by Shelokov because the cited reference neither discloses nor suggests an apparatus including a first member "having a first toroidal saddle shaped articulation surface including a first concave arc extending between leading and trailing ends of the first articulation surface and a first convex arc extending between first and

second lateral ends of the first articulation surface." Claim 1 is also unanticipated because Shelokov does not disclose an apparatus including a second member "having a second toroidal saddle shaped articulation surface including a second convex arc extending between leading and trailing ends of the second articulation surface and a second concave arc extending between first and second lateral ends of the second articulation surface." Claim 1 is also unanticipated because Shelokov does not disclose first and second members having opposing toroidal saddle shaped articulation surfaces "wherein the first concave arc has a radius that is greater than the radius of the second convex arc and the second concave arc has a radius that is greater than the radius of the first convex arc." Claims 3-4 and 6-7 are unanticipated, *inter alia*, by virtue of their dependence from claim 1, which is unanticipated for the reasons set forth above.

Independent claim 8 is unanticipated by Shelokov because the cited reference neither discloses nor suggests an apparatus including first and second members having opposing saddle shaped articulation surfaces "wherein the single concave arc of the first articulation surface has a radius that is greater than the single convex arc of the second articulation surface and the single concave arc of the second articulation surface has a radius that is greater than the radius of the single convex arc of the first articulation surface." Claims 9-11 are unanticipated, *inter alia*, by virtue of their dependence from claim 8, which is unanticipated for the reasons set forth above.

Independent claim 12 is unanticipated by Shelokov because the cited reference neither discloses nor suggests an apparatus including a first member "having a first saddle shaped articulation surface including a concave arc extending between leading and trailing ends of the first articulation surface and a convex arc extending between first and second lateral ends of the first articulation surface." Independent claim 12 is also unanticipated by Shelokov because the cited reference neither

discloses nor suggests an apparatus including a second member "having a second saddle shaped articulation surface including a convex arc extending between leading and trailing ends of the second articulation surface and a concave arc extending between first and second lateral ends of the second articulation surface." Claims 13-17 are unanticipated, *inter alia*, by virtue of their dependence from claim 12, which is unanticipated for the reasons set forth above.

The Examiner rejected claims 13 and 18 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent Application Publication No. 2004/0024462 to Ferree et al. Claims 13 and 18 are unobvious over Ferree by virtue of their dependence from claim 12, which is patentable over Ferree for the reasons set forth above.

The Examiner rejected claims 5 and 18 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,039,763 to Shelokov. Claim 5 is unobvious over Shelokov, *inter alia*, by virtue of its dependence from 1, which is patentable for the reasons set forth above. Claim 18 is unobvious over Shelokov, *inter alia*, by virtue of its dependence from 12, which is unobvious for the reasons set forth above.

Applicants have amended the claims in the present application in order to obtain prompt allowance of the case. Applicants respectfully note that they intend to pursue claims in related or continuing applications that are of a broader scope than the claims currently pending in this application.

As it is believed that all of the rejections set forth in the Office Action have been fully met, favorable reconsideration and allowance are earnestly solicited.

If, however, for any reason the Examiner does not believe that such action can be taken at this time, it is respectfully requested that she telephone Applicants' attorney at (908) 654-5000 in order to overcome any additional objections which she might have.

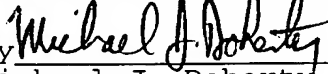
Application No.: 10/776,656

Docket No.: SPINE 3.0-455 CONT II

If there are any additional charges in connection with this requested Amendment, the Examiner is authorized to charge Deposit Account No. 12-1095 therefor.

Dated: December 20, 2004

Respectfully submitted,

By 

Michael J. Doherty  
Registration No.: 40,592  
LERNER, DAVID, LITTENBERG,  
KRUMHOLZ & MENTLIK, LLP  
600 South Avenue West  
Westfield, New Jersey 07090  
(908) 654-5000  
Attorney for Applicant

528320\_1.DOC